[PM322314]

Interactive design and automatic design using Dynamo
~Temporary housing project for natural disaster recovery

Speaker:
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Learning Objectives

- Understand the design method and rules for construction of temporary houses
- Learn how to apply interactive design to generate building layout plan with dynamo
- Learn how to automate creating detailed models and detailed drawings with dynamo
- Discover the areas of improvement brought by interactive design and automatic design approach respectively

Description

Japan has a lot of natural disasters. We suffer from damages by earthquakes, typhoons, tornados, flood etc. For those victims of large-scale disasters, temporary houses are provided by the government. With its prefab building technology, Daiwa House Group has built the largest number of temporary houses in Japan.
By utilizing BIM, we are challenging to shorten the lead time to provide temporary houses. Two types of programs by Dynamo are under development. One is to create layout drawings with interactive design method and the other is to create Revit detailed models and detailed drawings automatically.

Homepage with useful information

“Daiwa House Group Reduces Site Planning Time to One Hour, Ensuring Earthquake Victims Have Housing Faster”
https://customersuccess.autodesk.com/articles/daiwa-house-group-reduces-site-planning-time-to-one-hour-ensuring-earthquake-victims-have-housing-faster

About the Speaker

Speaker : Hisaharu Ito

I joined Daiwa House Industry in 1982.

In 2007, I became the chairman of the Revit user group Japan(RUG-J) and promoted Revit and BIM in Japan.

In 2011, I resigned as RUG-J Chairman and worked to realize BIM in-house.

Currently, as the head of the building department of the BIM Promotion Department, I am promoting a company-wide BIM transformation.

Autodesk Revit Expert Elite

Innovator of the Year nominees (2018 and 2019)

Past lecture: AU Japan. 2006, 2009, 2014, 2017, 2018, 2019

AU Korea 2018, BS Japan International (2018)

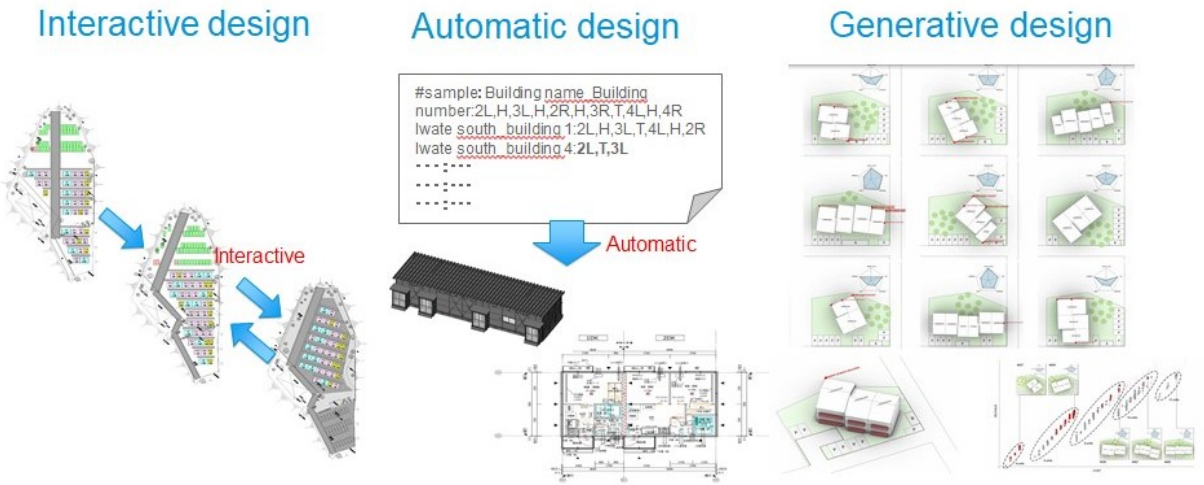
Co-speaker : Koto Kido

He joined Daiwa House Industry Co.,Ltd in 2017 after working for architectural design firms in Canada and Japan for 7 years.He is currently in charge of development and implementation of BIM standard for architectural design.

Contents

1. Interactive design & Automatic design & Generative design

Dynamo can be utilized in are interactive design, automatic design, and generative design.
How will Dynamo change the design and construction process?



2. Japanese natural disasters and construction of temporary housing

In Japan, we experience many natural disasters.

We have earthquakes, Tsunamis, typhoons, flooding and landsliders, we also have volcanos eruptions.

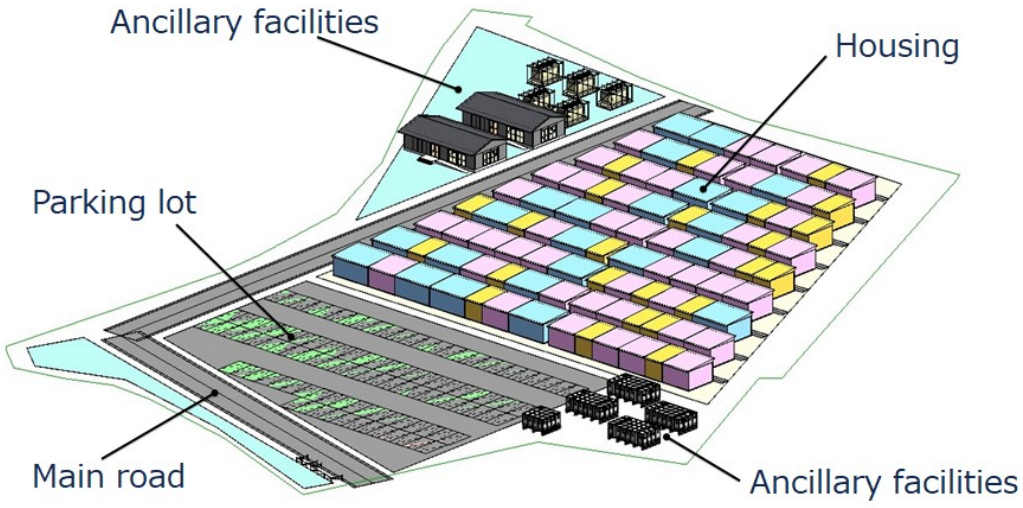
We need to provide temporary houses for those victims as quickly as possible.

Our temporary houses uses prefabrication technology.

3. About temporary housing

Temporary housing will create a main road on the site.

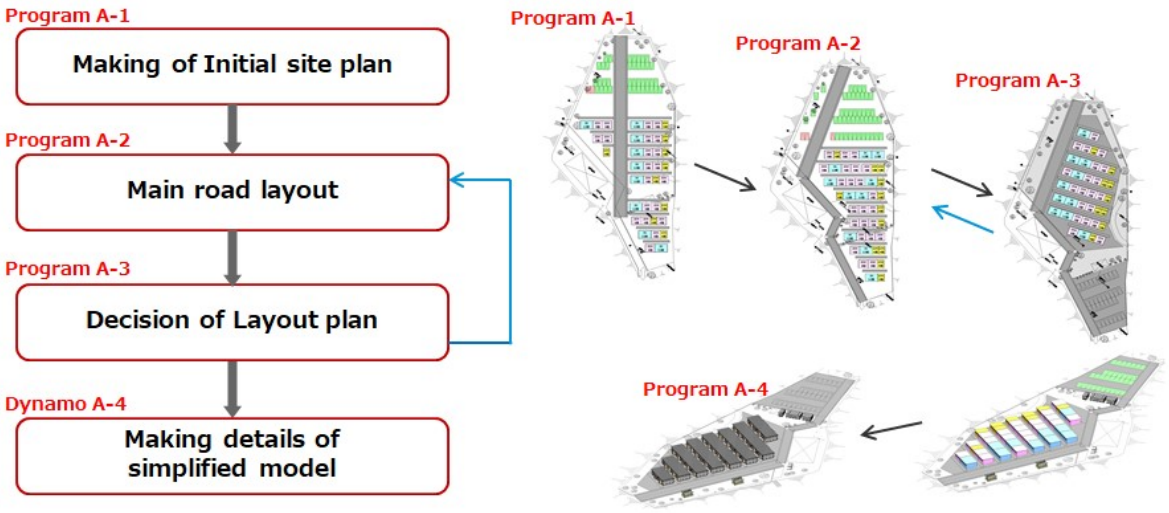
It consists of houses, parking lots and incidental facilities.



4. Creating site plan using Dynamo (Program A)

Four Dynamo programs were created to match the site planning process.

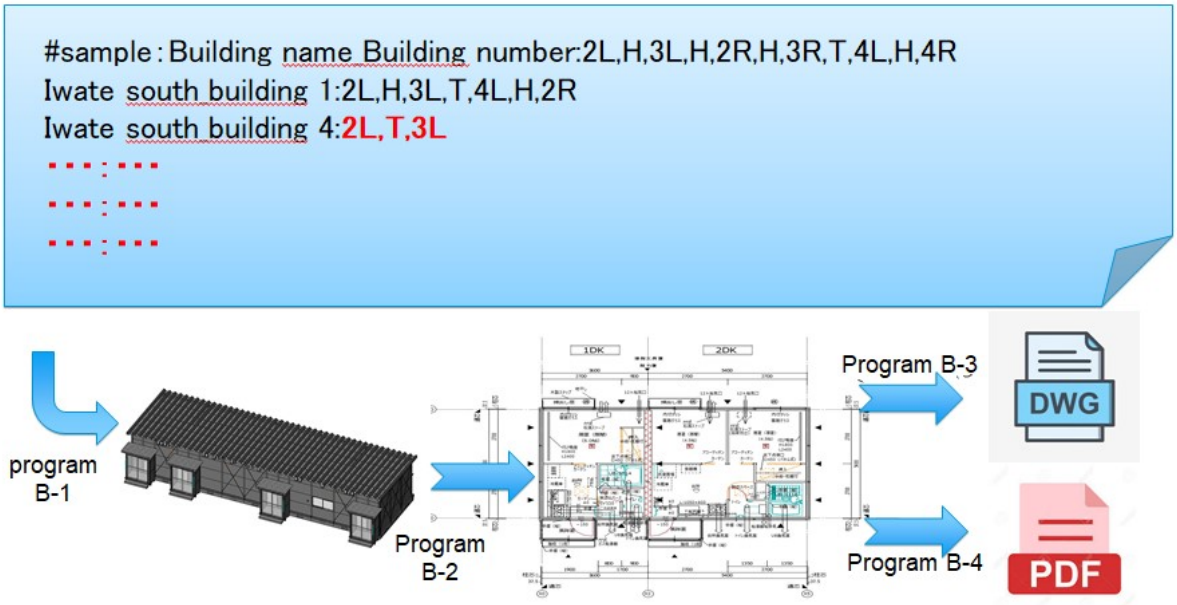
Rather than automatic designing, it is a tool for interactive designing.



5. Making for detailed models and drawings using dynamo(Program B)

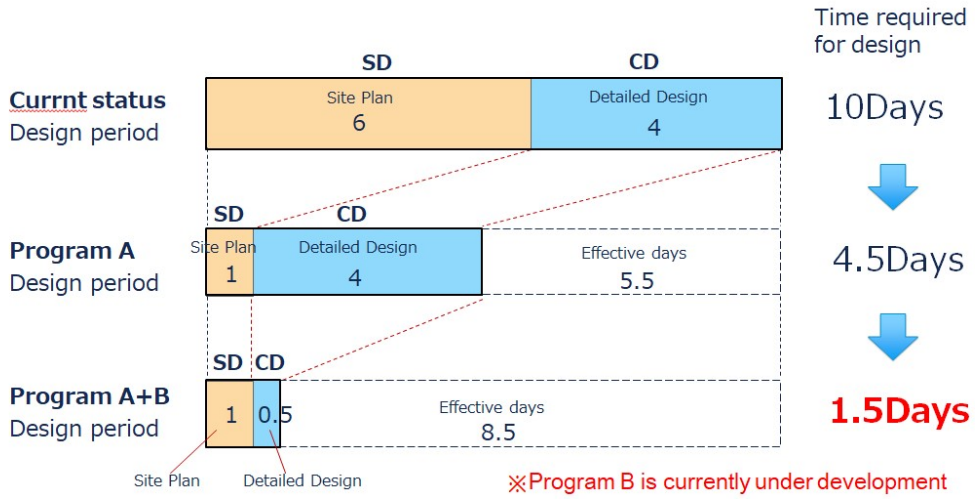
This Program B works on detailed models and detailed drawings.

Input is very easy.



6. Predictive effect in temporary housing by interactive design and automatic design

The work that would have taken 10 days with the conventional method is expected to be reduced by 85%.



6. Daiwa House BIM Strategy

We created a dynamo that automatically creates a parking lot layout.

In this way, dynamo can be used in various design process.

Design by dynamo is one of the changes in design work.

We are also working on BIM company-wide.